

The listing of claims will replace all prior versions, and listings, of claims in the application:

1 -22. **(Canceled)**

23. **(Currently Amended)** A method of depositing glass on a substrate comprising:

flowing at least one glass precursor material at a predetermined mass flow rate into a deposition zone of a substrate, ~~wherein the predetermined mass flow rate comprises a rate at which the pressure within the substrate comprises no more than about 99% of the soot formation pressure;~~

forming a plasma within the substrate;

reacting the glass precursor inside the substrate; and

subsequently modulating the mass flow rate of the glass precursor into the deposition zone in response to a change in a deposition zone pressure (P_D) to maintain the pressure within the substrate P_D substantially constant.

24. **(Currently Amended)** The method according to claim 23 wherein ~~the pressure within the substrate comprises P_D is~~ no more than about ~~95%~~ 99% of the soot formation pressure.

25. **(Currently Amended)** The method according to claim 23 wherein ~~the pressure within the substrate P_D comprises~~ no more than about 90% of the soot formation pressure.

26. **(Currently Amended)** The method according to claim 23 wherein ~~the pressure within the substrate P_D comprises~~ no more than about 85% of the soot formation pressure.

27. **(Original)** The method according to claim 23 wherein said modulating comprises reducing the mass flow rate of said glass precursor material.

28. **(Original)** The method according to claim 23 wherein said glass precursor material comprises a silicon containing compound

29. **(Canceled)**

30. **(Currently Amended)** The method according to claim 29 23 further comprising maintaining an intensity of said plasma substantially constant during said reacting.

31. **(Original)** The method according to claim 23 wherein said modulating comprises a stepwise modulation of said mass flow rate.

32. **(Original)** The method according to claim 23 wherein said modulating comprises a continuous modulation of said mass flow rate.

33. **(Original)** The method according to claim 23 further comprising depositing glass on an inner surface of said substrate, wherein an initial deposition rate of glass comprises at least about 2.2 grams/ minute.

34. **(Currently Amended)** The method according to claim 33 wherein an initial deposition rate during said depositing comprises

$$m_i = R_i^4 (P_{SF}^2 - P_T^2) / (C_1 T \mu_{eff} (1+x))$$

wherein m_i comprises an initial deposition rate, R_i comprises initial internal radius of the substrate, P_{SF} comprises the soot formation pressure, P_T comprises ~~the~~ a tailstock end pressure, C_1 comprises a constant, T comprises temperature, μ_{eff} comprises effective viscosity at temperature T , and x comprises the ratio of O_2 to a silicon containing precursor material.

35. **(Currently Amended)** The method according to claim 34 wherein ~~a pressure in the deposition zone (P_D)~~ comprises

$$P_D = (P_T^2 (R_i^2 - C_2 m_i t)^2 + C_1 T \mu_{eff} (1+x) m_i)^{1/2} / (R_i^2 - C_2 m_i t)$$

and wherein C_2 comprises a constant and t comprises time.

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36. **(Original)** The method according to claim 34 wherein an instantaneous deposition rate comprises $(P_{SF}^2 - P_T^2)(R_I^2 - C_2mt) - C_1T\mu_{eff}(1=x)m = 0$, wherein C_2 comprises a constant and t comprises time.

37 - 43. **(Canceled)**